Eastern Divide Insect and Disease Project Phase II

Draft Environmental Assessment Comments and Concerns

This document contains the George Washington and Jefferson NF (GWJNF) Eastern Divide Ranger District (EDRD) responses to substantive comments that were received during the comment period for the Eastern Divide Insect and Disease Project Phase II Draft Environmental Assessment (EA).

An email and hardcopy letters were sent out and a legal notice was published in *The Roanoke Times* on Monday, January 27th, 2020 to notify interested parties of the availability of the Eastern Divide Insect and Disease Project Phase II EA. This initiated the comment period, which ended on February 26th, 2020.

The Forest Service received correspondence from twelve individuals, organizations, and agencies. These comments have been analyzed and responded to using a process called content analysis. All notable comments were assigned a unique contact number generated from the correspondence number and the comment number (e.g. #38-2 would be the second comment identified from letter number 38). Commenters and their associated organizations are shown in Table 1, below.

Similar comments were grouped together, and for each group a concern statement was developed. Concern statements are meant to capture the thought, idea, or issue common to all of the associated comments. They often represent the view of many respondents but may also be derived from just one person's input. Concern statements provide the framework for preparing responses to public comment.

Comments may:

- Identify issues (cause and effect relationship between proposed action and effects);
- Suggest alternative ways to conduct the action, or lessen the impacts of the action through mitigation or project design feature;
- Suggest a method to measure effects; and/or,
- Provide new information for the interdisciplinary team to consider.

Not all comments are relevant to the decision; comments are not relevant (non-substantive) if they are:

- Beyond the scope of the proposal;
- Unrelated to the decision being made;
- Already decided by law, regulation or policy;
- Conjectural in nature or not supported by scientific evidence; or,
- General in nature (not specific to this project) or position statements not supported by reasons.

Table 1. Respondents to Eastern Divide Insect and Disease Project Phase II Draft Environmental Assessment

Letter #	Author Name	Organization Name	Date Submitted
1	Smith, Stephen		01/29/2020
2	Feasel, Darrel		01/29/2020
3	Ordiway, Linda	Ruffed Grouse Society	02/17/2020
4	Jenkins, David		02/17/2020
5	Bergoffen, Martin	SABP	02/18/2020
6	Peckman, Kristin		02/19/2020
7	First, Fred		02/19/2020
8	Hypes, René	Department of Conservation and Recreation-Division of Natural Heritage	02/26/2020
9	Bamford, Sherman	Virginia Chapter - Sierra Club	02/26/2020
10	Davis, Kristin	Southern Environmental Law Center	02/26/2020
11	Muhly, David		02/26/2020
12	Adams, Kelly	Virginia Chapter - Sierra Club	02/26/2020

General

General - #1: These comments express support for the Eastern Divide Insect and Disease Project Phase II.

#2-1 I would support any effort that creates a healthy forest habitat for Ruffed Grouse, American woodcock and other wildlife.

#3-1 the Ruffed Grouse Society (RGS) fully supports the proposed action.

#3-5 RGS looks forward to continued involvement in this project through implementation and monitoring of both vegetative and wildlife responses.

#3-6 This project is fully supported by RGS and we are appreciative of the opportunity to engage in the management of our National Forests.

Response: Thank you for your comments and your support for the Eastern Divide Insect and Disease Project Phase II. We appreciate your interest and participation in the planning process.

General - #2: These comments were determined to be non-substantive.

#10-91 we request the District estimate costs of plan implementation and assess the short and long-term security of funding sources. This should be part of the disclosed analysis.

Response: The intent of the Environmental Assessment is to analyze the effects from the proposed action and determine eligibility for a finding of no significant impact (FONSI). Estimating the cost of implementation is beyond the scope of the analysis.

#8-4 Caseknife, Tunnel Hollow, Gatewood Reservoir and Little Creek[. .]natural heritage resources have not been documented within the submitted project boundary [. .]the project boundary does not intersect any of the predictive models identifying potential habitat for natural heritage resources.

#8-10 Peak Creek[. .]natural heritage resources have not been documented within the submitted project boundary.

#8-13 There are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

Response: These comments provide information concerning resources that have not been documented within the project area.

Climate Change

<u>Climate Change - #1:</u> The Forest Service should analyze all processes implemented in this project for climate change impacts.

#10-51 The Draft EA does not include a single reference to climate change impacts from the proposed project.[. .]the District should include a discussion of how the proposed 1,200 acres of regeneration harvest relates to the JNF carbon stock.[. .]the District should use the assessment to integrate carbon stewardship with its management proposals for the area.[. .]The District must include a discussion of potential impacts to forest resilience to climate change in the EA.[. .]the District's failure to consider climate change ignores the wide recognition that our national forests play an important role in mitigating climate change and that forest management plays an important role in both mitigating the impacts of climate change and ensuring our forests are resilient to these impacts.

#11-15 The EA provides absolutely no analysis, not even a sidewards glance, as to the potential carbon or climate impacts of removing millions of cubic feet of mature forest in the Southern Appalachians.

<u>Response:</u> This project affects a relatively small amount of forest land and carbon on the GWJNF and might temporarily contribute an extremely small quantity of greenhouse gas (GHG) emissions relative to national and global emissions. The proposed action will not convert forest land to other non-forest uses, thus allowing any carbon initially emitted from the proposed action to have a temporary influence on atmospheric GHG concentrations, because carbon will be removed from the atmosphere over time as the forest regrows. Furthermore, the proposed project will transfer carbon in the harvested wood to the product sector, where it may be stored for up to several decades and substitute for more emission intensive materials or fuels.

This proposed action is consistent with internationally recognized climate change adaptation and mitigation practices proposed by the Intergovernmental Panel on Climate Change (IPCC) for minimizing the impacts of climate change on forests, thus meeting objectives for both adapting to climate change and mitigating GHG emissions (McKinley et al., 2011). The relatively small quantity of carbon released to the atmosphere and the short-term nature of the effect of the proposed action on the forest ecosystem are justified, given the overall change in condition increases the resistance to wildfire, drought, insects and disease, or a combination of disturbance types that can reduce carbon storage and alter ecosystem functions (Millar et al., 2007; D'Amato et al., 2011).

Some assessments suggest that the effects of climate change on some United States forests may cause shifts in forest composition and productivity or prevent forests from fully recovering after severe disturbance (Anderson-Teixeira et al., 2013), thus impeding their ability to take up and store carbon and retain other ecosystem functions and services. Climate change is likely already increasing the frequency and extent of droughts, fires, and insect outbreaks, which can influence forest carbon cycling (Kurz et al., 2008; Allen et al., 2010; Joyce et al., 2014). In fact,

reducing stand density, one of the outcomes of this proposed action, is consistent with adaptation practices to increase resilience of forests to climate-related environmental changes (Joyce et al., 2014).

For a more thorough review of climate and carbon impacts from this project refer to the Phase II Project Carbon Assessment (Forest Service, 2020) which tiers to the Forest-wide GWJNF Carbon Assessment (Forest Service, 2019). These documents have been published to the Phase II project webpage.

Coordination

<u>Coordination - #1:</u> The Forest Service should coordinate with the U.S. Fish and Wildlife Service (USFWS) and the Virginia Department of Game and Inland Fisheries (VDGIF) to ensure that this project complies with protected species legislation.

#8-3 here is potential for the little brown bat (Myotis lucifugus) and /or the tri-colored bat (Perimyotis subflavus), and the Northern Long-eared bat (Myotis septentrionalis, G1G2/S3/LT/LT) to occur within the project areas. Due to the legal status of little brown bat and tri-colored bat, DCR recommends coordination with the VDGIF to ensure compliance with the Virginia Endangered Species Act (VA ST §§ 29.1-563 - 570). Due to the legal status of the Northern Long-eared bat and the associated final 4(d) rule effective February 16, 2016, if tree removal is proposed for the project DCR recommends coordination with the USFWS and the VDGIF to ensure compliance with protected species legislation.

#8-8 Due to the legal status of the Candy darter, DCR also recommends continued coordination with the USFWS to ensure compliance with protected species legislation.

#8-9 There is potential for the little brown bat (Myotis lucifugus) and /or the tri-colored bat (Perimyotis subflavus), and the Northern Long-eared bat (Myotis septentrionalis, G1G2/S3/LT/LT) to occur within the project areas. Due to the legal status of little brown bat and tri-colored bat, DCR recommends coordination with the VDGIF to ensure compliance with the Virginia Endangered Species Act (VA ST §§ 29.1-563 - 570). Due to the legal status of the Northern Long-eared bat and the associated final 4(d) rule effective February 16, 2016, if tree removal is proposed for the project DCR recommends continued coordination with the USFWS and coordination with the VDGIF to ensure compliance with protected species legislation.

#8-11 There is potential for the little brown bat (Myotis lucifugus) and /or the tri-colored bat (Perimyotis subflavus), and the Northern Long-eared bat (Myotis septentrionalis, G1G2/S3/LT/LT) to occur within the project areas. Due to the legal status of little brown bat and tri-colored bat, DCR recommends coordination with the VDGIF to ensure compliance with the Virginia Endangered Species Act (VA ST §§ 29.1-563 - 570). Due to the legal status of the Northern Long-eared bat and the associated final 4(d) rule effective February 16, 2016, if tree removal is proposed for the project DCR recommends coordination with the USFWS and the VDGIF to ensure compliance with protected species legislation.

#10-104 the District must commit to implementation monitoring throughout the watershed as required by the Conservation Plan. The District must also coordinate with the Virginia Department of Game and Inland Fisheries to monitor the candy darter

Response: The Forest Service, as outlined in our Forest Plan, will coordinate with the appropriate state and Federal agencies during the analysis and implementation of the Phase II project. These include the Virginia Department of Game and Inland Fisheries (VDGIF) and the U.S. Fish and Wildlife Service (USFWS). Coordination with the state agencies has been continuous throughout the planning process, and agency staff from Virginia have provided detailed comments to the Forest Service.

One example is that GWJNF personnel are currently part of a Candy Darter Conservation Committee which includes Federal (USFWS and Forest Service), State (Virginia and West Virginia), and University partners, and will continue to work with those partners on conservation strategies, research and monitoring.

Consultation with the USFWS on this project is complete regarding all Federally Listed Threatened and Endangered (T&E) species potentially impacted by this project. The USFWS is the agency that oversees direct management of animals and fish across the nation, including administration of the Endangered Species Act of 1973. The USFWS is responsible for listing T&E species on lands managed by the GWJNF.

All species listed as Threatened, Endangered, or Regionally Sensitive (TES) were analyzed in the Biological Assessment/Biological Evaluation (BA/BE) prepared for this project. Potential impacts/effects to TES species from proposed project actions were analyzed in detail using the best available science, in the BA/BE.

Coordination - #2: The Forest Service should coordinate with the Virginia Department of Agriculture and Consumer Services (VDACS) on its Slow the Spread gypsy moth program.

#11-2 why did the USFS not follow up with a mating disruption program in coordination with Virginia Department of Agriculture and Consumer Services (VDACS) and its Slow the Spread program, such as was carried out in 2018 in other Southwest Virginia counties in areas of "low density populations" of caterpillars

Response: There was significant coordination between the GWJNF, the Forest Service Southern Region Forest Health Protection Unit, and VDACS during the planning phase of this project. Derek Puckett, Biological Scientist with the Forest Health Protection Unit, was on the ground with personnel from the EDRD to conduct field reviews of areas in and around many of the stands. He is the liaison between Forest Service and VDACS regarding the gypsy moth trap counts and monitoring.

Derek provided guidance to the EDRD regarding how to use the VDACS STS (Slow the Spread) Decision Support tool. VDACS maintains the gypsy moth traps and monitors the

counts. This information is then entered into the database to be viewed by agencies and the public to make informed decisions about management. The mating disruption program is a tool to manage “low-density” populations at or out in front of the STS leading edge. The leading edge is already considered to be past the areas proposed for treatment in this project. In consultation with Derek Puckett and review of STS Decision Support, this assertion is confirmed.

Once the leading edge has passed, suppression is how “high-density” populations are managed. There is limited funding available to treat stands with “high-density” populations through suppression treatments. Treatment areas are prioritized by need. The top three prioritized areas are; 1) recreation areas, including visitor centers, campgrounds, and day use areas 2) high-value timber stands and timber sale areas currently under contract, and 3) identified old growth forest communities. None of the stands proposed for treatment in this project are in the prioritized treatment areas.

Heritage

Heritage - #1: The Forest Service should provide information to support its conclusion that heritage and cultural resources will not be impacted.

#10-50 on what basis did the District conclude that Heritage and Cultural Resources are "not present," are "not directly or indirectly impacted by the alternatives" or are "out of the scope appropriate for [the] project"?[. .]Did the District conduct archeological surveys to determine whether there were heritage and cultural resources in the project area?[. .]if the District completed surveys, did it coordinate with the State Historic Presentation Office to determine whether it concurred with the District's findings of no impacts?[. .]the District must provide information to support its conclusion that heritage and cultural resources will not be impacted.

Response: The Forest Service analyzes the potential impacts to cultural and heritage resources, as required by the National Historic Preservation Act of 1966 (NHPA). Due to the sensitive nature of this information, the results, but not the analysis, are generally disclosed. All of the areas designated for any form of disturbance have been surveyed for cultural resource and/or archaeological evidence. It was determined that the proposed actions will not adversely affect significant scientific, cultural, or historical resources. Clearance was provided to the EDRD in an August 15th, 2019 letter from the GWJNF Supervisor’s Office that stated the project had been reviewed by the GWJNF Archaeology Staff, Virginia’s State Historic Preservation Office, and the Cherokee Nation’s Tribal Historic Preservation Office. This letter is available in the project record.

Management Prescriptions

Management Prescriptions - #1: The Forest Service should drop the harvest units located in unsuitable and inappropriate Management Prescriptions to comply with Forest Plan direction.

#10-22 The Forest Plan, however, makes clear that lands in Management Prescription 5C are "classified as unsuitable for timber production.".

#10-24 Within Management Prescription 6C: Old-Growth Forest Communities Associated with Disturbance in Bromley Hollow, the District proposes Shelterwood with Reserves treatments. These areas, however, are also "classified as unsuitable for timber production." Timber harvest would only be permitted where it is specifically designed to address vegetation and forest health purposes[. .]Because logging in this area is not consistent with the forest plan, the District must remove these areas from proposed timber harvest.

#10-32 The Draft EA states that the District may harvest timber in extended areas of Management Prescription 11: Riparian Corridors "to meet the purpose and need of the project." The Forest Plan, however, only allows timber harvest in the extended area of riparian corridors when the adjacent management prescription is suitable for timber harvest. As discussed above, timber harvest is not suitable in Management Prescriptions 5C, 6C, and 7E2. Accordingly, the District cannot proceed with any timber harvest where the adjacent management prescription is 5C, 6C, or 7E2.

#10-33 the District cannot simultaneously rely on riparian corridors to protect candy darter and other species, while also proposing logging in the riparian corridors.

#10-110 Although the project units do not appear to overlap the 9F-Rare Communities management prescription, the District must evaluate whether these communities will be impacted and take care to ensure that they are not.

#10-125 the Forest Plan allows timber harvest in the extended riparian corridor only when the adjacent management prescription is suitable for timber harvest.

Response: In Chapter 1 of the Forest Plan under *Structure of the Forest Plan*, it states

> "*The map accompanying this Forest Plan displays the boundaries of the management areas and the allocation of the management prescriptions. This map was generated using a Geographic Information System accurate to a scale of ¾ inch to one mile, therefore the boundaries displayed on this map can be assumed to vary on the ground up to 500 feet in any direction*" (p. 1-6).

The commenter has noted that Management Prescription (Rx) 5C Designated Utility Corridors are "classified as unsuitable for timber production". However, Rx 5C areas are mapped as 500 feet wide and typically include forested areas on either side of the actual right-of-way (ROW) clearing. Thus, there are small portions of harvest units adjacent to the ROW that are in the forested portions of Rx 5C. Because of the variance on the ground up to 500 feet described in

the Forest Plan, the areas in question are considered to be Rx 9A1 Source Water Protection Watersheds for this project. These areas are typically non-forest and that's why they are unsuitable, but since there are trees that extend into the 5C corridor from adjacent Rx areas they are appropriate for management. The desired condition for 5C is that is to be managed to retain low-growing vegetation which conforms to the safe operating requirements of the utility. Should these areas become defoliated and sustain mortality some trees will become a hazard to the utility line and would add fuel for potential wildfires.

Upon layout of units, no old growth will be harvested in this project. There were some areas of Rx 6C Old Growth Forest Communities Associated with Disturbance —as defined by the Regional Guidance and forest survey protocol— that were ground verified by the EDRD Biologist and will be left out upon unit layout. A number of mapped units currently contain old growth areas.

These Rx 6C Old Growth polygons were primarily mapped in the Bromley Hollow area based on 1930s aerial photography. It appears some areas were selectively cut prior to the 1980s, when the Forest Service built the Bromley Hollow Road. As a result of that, some of the mapped old growth from photos was logged during the 1980s. The project maps released with the draft EA differ slightly from the actual unit boundaries as they will be on the ground once old growth and riparian areas are removed from the sale units.

As noted by the commenter, there are proposed vegetation treatments adjacent to, but not overlapping with, Rx 9F Rare Communities areas. The Rx 9F areas were not analyzed as they are outside of the project area. Forest Plan mitigation measures will be followed where stands are adjacent to Rx 9F. Further, Dismal units 16, 17, and 18 that are adjacent to the Rx 9F have been dropped from the proposal

<u>Management Prescriptions - #2</u>: The Forest Service should drop the harvest units located in Management Prescription 9A1 or modify its proposal in them to comply with Forest Plan direction.

#10-28 The District's proposed management in Management Prescription 9A1 would violate the Forest Plan. The primary emphasis of Management Prescription 9A1: Source Water Protection Watersheds is to "provide clean drinking water by maintaining healthy watersheds containing healthy forests."[. .]the District proposes its most intense harvest method—Coppice with Reserves down to a residual basal area of 5-15 square feet per acre—here.[. .]The District must drop these units or modify its proposal in them to comply with the Forest Plan, NEPA, and the NFMA.

#10-29 The Plan goes on to note that "longer rotation ages and a low percentage of early successional forest in these areas reflect a 'low intensity' approach to vegetation management and the higher priority of protecting drinking water." Where timber harvesting occurs in 9A1, "harvesting operations focus on what is retained in the stand, not on wood fiber production" and "harvest practices are modified to recognize the watershed values of these lands."[. .]the Plan provides a rotation age of 120-180 years for upland hardwoods and cove hardwoods. The Draft EA, however, indicates these stands range in age from 83 to 138 years, with an average age of

around 106 years. Has the District done field inventory indicating that FSVeg data is incorrect and these stands at least meet the minimum rotation age for regeneration harvest in these areas?

#10-30 the District's proposal would likely create more than 4% ESH allowed by the Forest Plan in these areas. The Draft EA indicates there are 135 acres of existing ESH in these areas. The District proposes logging an additional 268 acres in the Caseknife, Peak Creek, and Tunnel Hollow areas. This would result in 403 acres of ESH, which is about 3.7% of the 10,905 acres of 9A1 land within the project area.

#10-31 The District also acknowledges, however, that it has approved 5,000+ acres of prescribed fire in the Tract Mountain area. The District estimates that 80 acres (about 1.6%) of these will create ESH. What is this estimate based on? It does not comport with GWJNF fire effects data, which shows that a single prescribed burn creates an average of 5% ESH. Thus, the prescribed burn would create an additional 250 acres of ESH in the project area. Combined with existing ESH and timber harvest, this would result in 653 acres of ESH, constituting 6% of the 10,905 acres of 9A1 land within the project area.[. .]This, of course, exceeds the maximum of 4% ESH allowed within 9A1 areas

#10-65 units 4 and 5 in Tunnel Hollow, which are in Management Prescription 9A1: Source Water Protection Watershed, have soils with a high potential for erosion and appear to be along a ridge, with some slopes great than 35%.[. .]The District cannot justify significant ground disturbance in a unit with highly erodible soils and steep slopes, which is located in a management area that emphasizes water quality protection. And the Forest Plan requires the District to use advance harvest methods in areas with highly erosive soils and steep slopes.

Response: The coppice with reserves harvest method was selected to maximize coppice regeneration of oak trees in the stands. This method will also allow maximum light to the forest floor to promote vigorous growth of the young stems and other germinates leading to a stand that is more resilient to insect and disease infestations. For this reason, it is determined to be the optimum method to achieve these goals. (16 USC 1604(g)(3)(F)(i)). Any partial harvest (e.g. shelterwood and/or thinning) would not be as appropriate since any oak that is left uncut will not sprout and given the defoliation history of some of these areas and proximity to high egg mass counts, may succumb to future decline and mortality. Less vigorous trees are unlikely to contribute to future regeneration as mast production is reduced sharply after future defoliation events (Nakajima, 2015; McGraw et.al., 1990). The residual basal areas for both treatments have been increased to 20 to 40 square feet for shelterwood treatments and 15 to 25 square feet for coppice with reserves.

Shelterwoods in relation to gypsy moth interactions are only recommended where land managers are committed to using insecticide in the shelterwood areas to control the gypsy moth so that the trees may remain intact and provide the necessary shelter (Gottschalk, 1993). Ariel spraying of insecticide in this area may be controversial to the public; therefore, shelterwood regeneration is not an ideal treatment. Maintaining oaks in the future overstory is appropriate for maintaining healthy watersheds containing healthy forests

Stands of trees are harvested according to requirements for culmination of mean annual increment of growth (16 USC 1604(m)). Stand ages of the proposed harvested areas are at least 83 years of age, well past the culmination of mean annual increment (CMAI) for these forest types and site productivities. Growth and yield modelling for the Forest Plan analysis indicated that upland hardwoods on these sites are generally expected to reach CMAI at approximately 65 years of age. The EDRD has completed field inventory (common stand exams) documenting that these stands meet the minimum rotation age.

The creation of early successional habitat (ESH) would not exceed four percent with the proposed acres. Acres proposed in the Tunnel Hollow area are included for treatment only if these acres would not push early successional habitat over the four percent threshold. Prescribed burn tactics can be modified to limit intensity and effects; therefore limiting or avoiding the creation of any new ESH. A recent March 2020 prescribed burn (Tract Mountain-Sub Unit 3) in this 9A1 Rx area was implemented and created no new ESH. This demonstrates that objectives and appropriate firing tactics can be implemented to limit the creation of too much ESH. Post burn monitoring will determine how much, if any, ESH is created in this prescription area.

Soils are typical of the Ridge and Valley province and numerous past timber harvests on similar soils have occurred with timber sale contractual provisions limiting impact through winching and use of cables. There are no sustained slopes of 35 percent or greater. Where short sections of steeper areas occur, logging equipment will remain on established skid roads of less than 15 percent grade and winching will be utilized. All riparian zones as identified in Appendix A of the Forest Plan will be vehicle exclusion zones and no harvest will occur within those zones. No irreversible damage is expected to occur as a result of soil, slope, or other watershed conditions. (16 USC 1604(g)(3)(E)(i)). Appropriate mitigations such as riparian buffers and other BMP’s will mitigate impacts on soil, watershed, and aquatic resources.

<u>Management Prescriptions - #3</u>: The Forest Service should drop the harvest units located in Management Prescription 7E2 to comply with Forest Plan direction.

#10-25 Within Management Prescription 7E2: Dispersed Recreation Areas-Suitable in Dismal, the District proposes Shelterwood with Reserves treatments.[. .]The Forest Plan allows timber harvest in these areas only "where hunting recreation and watchable wildlife are emphasized." [. .]Because hunting and watchable wildlife are not emphasized in these areas, and because timber harvest would likely be incompatible with the emphasized recreational uses of horseback riding and hiking, the District must drop proposed timber harvest in Management Prescription 7E2.

#10-114 the District cannot ignore the effects of the proposed action on dispersed recreation and trails while simultaneously proposing three units of regeneration harvest in management prescription 7E2 - Dispersed Recreation Areas

#10-116 In the case of units with management prescription 7E2, the Forest Plan also provides that timber harvest must be "compatible with the recreational and aesthetic values of these lands."

#10-126 in management prescription 7E2, timber harvest must be "compatible with the recreational and aesthetic values of these lands." Therefore, even though the management prescription is suitable for timber harvest in general, regeneration harvest in management prescription 7E2—and by extension in extended riparian corridors embedded within 7E2 areas—is not compatible with the Forest Plan.

Response: Three units within the Dismal working area were dropped in the modified proposed action due to sedimentation concerns that affected the endangered candy darter. These units, Dismal 16, 17, and 18, were the only units within the 7E2: Dispersed Recreation Areas-Suitable Management Prescription. Therefore, it is no longer an issue as to whether the proposed action is compatible with the recreational and aesthetic values of this management prescription.

Management Prescriptions - #4: The Forest Service should modify its proposal for harvest units located in Management Prescription 8A1 to comply with Forest Plan direction.

#9-6 The Forest Service is proposing to leave too few "reserve trees" in its logging units, contrary to requirements of the Forest Plan.

#10-3 Why else would the District reduce the residual basal area to below what the Forest Plan even analyzed?

#10-27 The District's proposed residual basal area is below Forest Plan's minimum basal areas.[. .]Standards for Management Prescription 8A1: Mix of Successional Habitats in Forested Landscapes, provide the following primary methods of regeneration harvest: * Two-aged silvicultural systems, including Shelterwood with Reserves, with a residual basal area of 20 to 40 square feet per acre, * Coppice with Reserves, with a residual basal area of 15 to 25 square feet per acre.[. .]Why has the District proposed to log more intensely than the Forest Plan analyzed or allows?

#11-12 The proposed action leaves far too few reserve trees and leaves too little basal area to adequately promote healthy forest regeneration and ecosystem health, but rather is primarily designed to extract the most timber.

Response: As noted in the *Public Involvement* section of the Final EA for the Phase II project, the residual basal area for Management Prescription 8A1 was increased to conform with Forest Plan guidance. There was internal discussion as to the appropriate terminology for the proposed treatments, whether they were, in fact, coppice with reserves rather than a shelterwood cut. It was decided that the proposed shelterwood treatments would be implemented with a residual basal are of twenty to forty square feet. This change is reflected in the modified proposed action analyzed in the final EA.

Monitoring

Monitoring - #1: The Forest Service should describe and commit to a detailed monitoring plan for the proposed project.

#10-132 It is essential that the District describe and commit to a detailed monitoring plan for the proposed project[. .]adequate monitoring plans should be developed during project development and analysis, and be available for public review. Simply stating that the District will monitor the project actions does not count as a full and adequate consideration of monitoring.

Response: The EDRD will commit to all requirements for monitoring and reporting as described in the Forest Plan, and to effectiveness monitoring of erosion control measures used in timber sales in the Dismal Creek watershed. Annual monitoring will occur for all harvest units in the Dismal watershed, including active and post-harvest periods.

NEPA Process

NEPA Process - #1: The Forest Service should undertake an Environmental Impact Statement (EIS) for this project, as an Environmental Assessment is not adequate.

#5-1 This project requires an EIS. It has many areas where significant impacts may occur.

#5-8 Failure to prepare an EIS will result in significant harm to the forest and its human and non-human users.

#9-3 The Forest Service should more thoroughly evaluate combined impacts of all three before proceeding - through an Environmental Impact Statement.

#11-3 a project of this magnitude probably requires an Environmental Impact Statement (EIS) to be performed, not a cursory glance (justified by virtually exclusively academic research) in an Environmental Assessment.

#12-4 The Forest Service should more thoroughly evaluate combined impacts of all three before proceeding[. .]through an Environmental Impact Statement.

#12-6 I ask you to conduct a thorough environmental impact statement before proceeding with this project.

Response: An Environmental Impact Statement (EIS) is appropriate when the effects of a project are determined to be environmentally significant; the need for an EIS is not based on the size,

duration, or public controversy of a project. The purpose of an Environmental Assessment (EA) is to determine if the effects from a project would be environmentally significant. For the Phase II project, the conclusion was that the effects would not be significant.

An EIS does not necessarily involve a more in-depth analysis. It does, however, preclude the need to avoid significant environmental impacts since there is no Finding of No Significant Impact (FONSI) for an EIS, merely a description of impacts. The purpose of an EIS is to thoroughly analyze significant impacts and any alternatives that might help minimize or avoid them. To prepare an EIS takes a much greater amount of personnel time and money, requires review by the Environmental Protection Agency (EPA) and multiple notices in the Federal Register, and yet provides no advantage in the outcome.

There is no benefit to preparing an EIS when preliminary analysis shows the likelihood of no significant impacts. Undertaking an EIS could add an additional two to three years to this project from this point and would not likely result in a substantially different proposal.

NEPA Process - #2: The Forest Service should analyze the effects that the proposed action will have on the Dismal Creek Virginia Mountain Treasure, which meets the criteria for designation as a potential wilderness area (PWA) or inventoried roadless area (IRA) designation.

#5-5 Significant impacts to potential wilderness areas.

#10-93 The District must analyze the effects that timber harvest within the Dismal working area will have on the area's future potential for wilderness or inventoried roadless area (IRA) designation.

#10-94 Before deciding to proceed with timber harvest within an area that possesses the characteristics that qualified it for inventory, the agency must evaluate the impacts of such a decision on those characteristics.

#10-95 The Dismal Creek Area meets criteria for designation as an IRA.

#10-96 The Dismal Creek area also meets the criteria for designation as a potential wilderness area (PWA).

#10-109 Dismal Creek is also recognized as a Virginia Mountain Treasure.

#12-1 The project would include 600 acres of logging in and around the 7,008 acre Dismal Creek Virginia Mountain Treasure area.

Response: The Dismal Creek Virginia Mountain Treasure appellation is derived from *Virginia's Mountain Treasures; The Unprotected Wildlands of the Jefferson National Forest* (Parsons, 1999). This outdated publication is currently not in circulation and is generally unavailable to the public. It was produced by the Wildness Society as the fifth in a series "describing the unprotected wildlands of national forests in the Southern Appalachians". As such, it is not part of the law,

regulation, or policy that provides direction and guidance for our management of Forest Service lands.

There are no inventoried roadless areas (IRAs) within the Phase II project area. IRAs were identified in the national 2001 Roadless Area Conservation Rule (RACR). The RACR prohibited road construction and reconstruction in IRAs and outlined roadless area characteristics. IRAs are characterized as having an undeveloped character and are valued for many resource benefits including wildlife habitat, biological diversity, and dispersed recreation opportunities.

During Forest Plan revision, an updated inventory of roadless areas may be conducted, however, updated roadless inventories after January 12, 2001 do not affect the lands covered by the RACR. In effect they represent new information, but the restrictions of the RACR do not apply to them except where they overlap with the lands where the rules apply. Although the commenter contends that the Dismal Creek Area meets the criteria for designation as an IRA, it was determined during the plan revision process that the road density was too high to include this area. Revisiting this decision is beyond the scope of the Phase II project.

There are no congressionally designated Wilderness Areas within the project area. The direction in Forest Service Manual (FSM) 1909.12 – Land Management Planning Handbook, Chapter 70 - Wilderness describes a broadly inclusive process for inventorying and evaluating lands for their potential as wilderness to make recommendations whether any lands within a plan area should be recommended for wilderness designation by Congress. Per FSM direction:

> "This inventory of potential wilderness is not a land designation, nor does it imply any particular level of management direction or protection in association with the evaluation of these potential wilderness areas".

This inventory is completed during the plan revision process with the express purpose of identifying all lands that meet the criteria for being evaluated for wilderness suitability and possible recommendation to Congress for wilderness study or designation. Potential wilderness areas are not defined or considered outside of this process and such an evaluation is beyond the scope of the Phase II project.

<u>NEPA Process - #3</u>: The Forest Service failed to adequately analyze impacts to a number of resources. The analysis document is too short.

#10-1 Why did the District determine that the impacts of this project and its alternatives could be adequately analyzed in around 25 pages?

#10-34 The District entirely omitted consideration of roads, recreation and scenic resources, climate change, locally rare species, and heritage and cultural resources in the Project area.

#10-54 the District failed to adequately analyze impacts to water quality and soil, threatened, endangered, and sensitive species, herbicides and non-native invasive species, and old growth.

Response: Per the regulations applicable to this project, Forest Service Handbook (FSH) 1909.15 Chap. 40 Sec. 41.2 states that "*The length and detail of an EA may vary; however, CEQ advises agencies that they should be concise and normally not exceed 15 pages*." The Code of Federal Regulations at 36 CFR 220.7(a) notes that *The EA may incorporate by reference information that is reasonably available to the public*.

The Phase II EA summarized and incorporated the full analysis contained in the project specialist reports, including the soils / hydrology and aquatic habitat reports posted on the project website (https://www.fs.usda.gov/project/?project=54346). Updated versions of these reports, along with the final Biological Evaluation/Biological Assessment for Threatened, Endangered, and Sensitive (TES) Species, will be posted along with the final version of the EA. The final EA has been updated to address project issues presented during the draft EA comment period.

NEPA Process - #4: Because the Draft EA is a decision document, the Forest Service must consider whether or not to implement specific TAP recommendations.

#10-36 Because the Draft EA is a decision document (unlike the TAP or Forest Plan), the burden to deal with the roads system hits home now; the District's failure to discuss roads is unacceptable.[. .]the District must consider how this project fits into this larger roads analysis, whether or not to implement specific TAP recommendations, and whether there are any roads in the project area that the TAP recommends for downgrading or decommissioning. This consideration must be included in the EA to ensure the District is accurately classifying roads and characterizing necessary maintenance work as required by the Forest Service regulations. The District must also account for the impacts of this work in the EA for the project.

#10-42 Without any analysis and consideration of the TAP recommendations for roads in the project area, the District's Draft EA violates NEPA and cannot provide the basis for a finding of no significant impact.

Response: An environmental assessment (EA) is not a decision document. As stated in FSH 1909.15 Chap. 40 Sec. 41.1, the purpose of an EA is to briefly provide sufficient evidence and analysis for determining whether to prepare an environmental impact statement (EIS) or a finding of no significant impact (FONSI).

The EA for the Phase II project did not consider the recommendations developed from the Forest-wide travel analysis process (TAP) as no new road construction was included in the proposed action or alternative. As such, the implementation of specific TAP recommendations is considered to be outside the scope of the purpose and need of this project.

NEPA Process - #5: The Forest Service should analyze additional alternatives to the proposed action, including an alternative that considers other management activities, such as thinning and prescribed fire, to achieve oak regeneration; an alternative that addresses or avoids existing non-native invasive species populations; and an alternative that avoids particular areas such as the

Walker Mountain Glades Conservation Site or Management Prescription 9A1: Source Water Protection Watersheds.

#3-4 is there the opportunity for prescribed fire at a larger scale that would incorporate the proposed stands within the burn unit?

#8-2 DCR recommends avoidance of the natural heritage resource located immediately north of the project area (Block 5).

#9-1 The Forest Service should not be proposing its most intense regeneration harvest in areas set aside to protect drinking water sources.[. .]Maintaining tree cover to protect water quality has to be the priority here, not maximizing timber harvest.

#9-4 The Forest Service shouldn't consider only intense regeneration harvest to meet its goals. For example, thinning is likely more appropriate in some areas to promote oak regeneration and improve forest health.

#10-4 Why else would the District not propose thinnings or prescribed fire to actually promote oak regeneration?

#10-16 the District should consider whether intermediate treatments like thinning could better achieve the purpose and need of this project.

#10-17 the District seems not to have considered the use of thinnings and/or prescribed fire to meet its oak regeneration objective.

#10-18 the District should prioritize the prescribed fire areas that do overlap with logging units for this project.

#10-92 if the District ultimately determines that NNIS control/eradication is unlikely to succeed in a specific area, we urge the District not to move forward with logging in the area until those threats can be addressed adequately.

#10-112 Given the threats that exotic weeds pose to rare communities in the working area and the known correlation between NNIS, ground disturbing activities, and travel corridors, the District must take extra care to ensure that NNIS infestations do not occur.

#10-134 In light of the above, the District needs to consider a new alternative that proposes management consistent with the Forest Plan, NFMA, and NEPA.[. .]a new alternative should include, but is not be limited to, the following components: * Conduct site-specific stand examinations to diagnose forest needs in specific areas and develop silvicultural prescriptions that science shows will address those needs; * Consider gypsy moth science and adjust objectives based on that science; * Consider the science regarding oak regeneration, including the importance of canopy condition, advanced oak regeneration, site conditions, and other hurdles like deer browse; * Consider other management activities, such as thinning and prescribed fire, to achieve oak regeneration * Focus logging in management prescription 8A1 and avoid logging in inappropriate management prescription areas, such as 5C, 6C, 7E2, 9A1, and 11; * Avoid logging in uninventoried roadless area like the Dismal area; * Increase the residual basal area to

at least the minimum levels analyzed in Forest Plan; * Thoroughly analyze road/travel impacts, including consideration of the TAP, Clean Water Act requirements, and the impacts of converting trails to roads * Thoroughly analyze impacts to: * Recreation and scenic resources * Heritage and cultural resources * Threatened, endangered, sensitive, and locally rare species * Climate * Karst * Water quality across the project area * Water quality in light of limited effectiveness of BMPs * Water quality from erosion and sedimentation, including in relation to soil types and slopes * Water quality, including in relation to herbicides * Soil * Old growth * Non-native invasive species * Wilderness characteristics in Dismal Creek * Biological and recreation resources in Dismal Creek * Cumulative impacts; * Prioritize ecological restoration as means to create ESH, e.g., harvest in low- diversity stands that would benefit from treatment to restore a diversity of structure and tree species, harvest in early- or mid-successional stands that were logged relatively recently and are dominated by maple, poplar, or other non-oak species, logging in pine plantations or other uncharacteristic forest; and * Commit that all bladed skid trails/roads and temporary roads on slopes of 35% or greater will be less that approximately 300 feet in length.

#11-13 The Forest Service should focus on uneven-age and other thinning options and management based on age, species, health and vigor.

#11-16 A new EA (if not an EIS) should be drafted which includes rigorous analysis of these issues and an alternative that incorporates those issues and considerations.

#12-5 the agency should complete new analysis that includes the new alternative

Response: We are required by the National Environmental Policy Act (NEPA) to explore and evaluate reasonable alternatives to the proposed action when there are "unresolved conflicts concerning alternative uses of natural resources." In our analysis, we have not identified any such conflicts.

Public comments that describe issues of concern help us identify alternatives, although we are not required to analyze these alternatives in detail provided that we briefly discuss the reasons for dismissal from analysis. These could include: that it does not respond to the project purpose and need; it is duplicative of the alternatives considered in detail; or it does not conform to existing law, regulation, or policy such as the Forest Plan. A list of the alternatives eliminated from detailed study, including no action, no herbicide, and a thinning and prescribed fire emphasis, is included in the Alternatives section of the EA.

Although no additional alternatives were analyzed, the proposed action was modified based on comments received. Three shelterwood units within the Dismal working area were dropped due to concerns over sedimentation and the residual basal areas were increased for both the shelterwood and coppice treatments. The Walker Mountain Glades Conservation site is not included in the proposed treatments due to the steep and rocky nature of the site.

NEPA Process - #6: The Forest Service did not sufficiently engage with the public during the planning process for this project.

#11-5 the short list of "Agencies and Organizations Consulted" at the end of the EA was not an adequate enough list to substantially engage the public

Response: As noted in the *Public Involvement* section of the Environmental Assessment (EA), the District hosted two pre-scoping public meetings in August 2018 and an additional public meeting during the 45-day scoping period in May 2019. Feedback received from the public prompted an internal review that resulted in changes to the project proposal and additional analysis. The number and extent of opportunities for public engagement has been greater than is typically the case for this type of project and we disagree that the level of engagement has been insufficient.

NEPA Process - #7: The Forest Service has not shown that the proposed action satisfies the purpose and need for the project.

#10-5 Neither analysis in the Draft EA nor other evidence shows that the proposed silvicultural prescriptions will satisfy the purpose and need of this project.

Response: The proposed silvicultural prescriptions achieve the primary objective of creating early successional habitat in the respective Rx areas and regeneration of some oak via competitive oak sprouts post-harvest. Existing stand data reveal that the composition and size of existing oak species, coupled with subsequent post-harvest treatments such as mechanical site preparation, herbicide treatment of undesirable competitors, and timber stand improvement activities, should encourage oak to be a component of future stands.

Recreation

Recreation - #1: The Forest Service should consider impacts to dispersed recreation and trails, including the use of trails as roads and the effects of increasing access for illegal motorized use.

#10-26 the District intends to use equestrian trails in the Dismal area to access logging units[. .]If the District does not commit to restoring and maintaining these trails after proposed timber harvests, the project will have an adverse impact on equestrian recreation in the area.

#10-38 In the Gatewood area, the TAP notes several issues related to FR 6871[. .]How will this project impact the existing issue of unauthorized roads and ATV usage?[. .]Opening these areas up more would only serve to encourage greater ATV use, exacerbating the problem.

#10-49 The District also failed to consider impacts to dispersed recreation and trails, as well as scenic resources, despite proposing management in popular recreation areas.

#10-115 Has the District evaluated whether impacts to the Appalachian Trail viewshed will comply with the Forest Plan's standards to protect scenic resources.

#10-117 it appears that several units overlap existing trails; for example, unit 16 sits directly atop the Hoof and Hill Horse Trail. The FSTopo basemap covering Dismal Creek also indicates a network of trails at the head of the drainage that units 13-15 will overlap. The District should evaluate how the proposed action will affect trails within the project area, especially those trails that are covered by units proposed for harvest.

#10-118 Does the District propose to maintain affected trails after harvest?

#10-119 The District must also specifically consider impacts to equestrian recreation in the Dismal working area. In addition to Little Horse Equestrian Trail, other equestrian trails in the Dismal working area include the Pearis Thompson, Standrock Branch, Hoof & Hill, Deetz, and Rooster Equestrian Trails.

#10-120 What will the impact be on access and use of these trails during project implementation?

#10-121 What is the District's plan for maintaining the numerous trails in the Dismal Creek area to ensure they do not become overgrown with briars and in turn unusual?

#10-122 if the Service intends to use these trails as roads in the project area, they must consider the impacts on recreation associated with constructing, upgrading, and using these trails to access logging units.

#10-123 what is the Service's plan for maintaining the trails during and after timber harvest to ensure equestrian rides are still able to use the trail?

#11-4 recreational experience will be negatively impacted by coming upon large clearcut units.

Response: The summary analysis of the impacts to dispersed recreation and trails was succinct due to the limited nature of the disturbance. Short-term impacts to trail users may occur during active treatment periods if trails need to be closed for safety concerns. These closures will be temporary and will only affect a portion of the trail opportunities within the project area at any given point in time.

To protect the scenic quality of the Dismal Creek area, we will implement a 50-foot feathered buffer from the trail edge. All trees within five feet along designated trails within the project area will not be cut except where temporary roads or limited skid trails might enter a harvest unit. The remaining 45-foot buffer would retain 60 to 80 square feet of basal area consisting of trees with healthy codominant and dominant crowns as the favored leave trees.

In areas where the scenic quality is considered moderate, 30 to 40 square feet of basal area will be retained. Leave trees will be designated based on health, wildlife den potential and crown class. This would include Dismal Unit 6 and should be an adequate amount of tree retention to prevent direct impacts to the trail and to avoid the issue of undergrowth encroachment associated with opening the canopy above the trail corridor.

A number of trails in the project area were historically roads and continue to be used as such for administrative purposes only. Planned upgrades, such as culverts, spot blading, and spot placement of smaller gravel where needed are expected to benefit trail users by addressing current maintenance issues and reducing future maintenance needs. As they are now, these old roads will revert back to more single-track conditions once logging activities are finished.

The EDRD is committed to mitigating longer-term impacts through the restoration and maintenance of any trails directly affected by timber harvest activities. The GWJNF is the in early stages of creating a forest-wide trails strategy as part of the national 10-year Trail Shared Stewardship Challenge (https://www.fs.usda.gov/managing-land/trails/10YTC) to increase our capacity to care for trails over the long term and to directly increase on-the-ground results to benefit trails.

The Flat Top trail system within the project area has been identified on the EDRD as a priority location to implement this strategy. This is a long-term goal to strengthen our relationship with current trail volunteers and to engage other stakeholders, local governments, private business, and the outdoor recreation industry. Short term efforts would include requirements for the timber purchaser to restore any affected trails back to a pre-disturbance condition or better. This is in conjunction with existing plans to reconstruct problem areas where sustainability is already an issue.

Another concern to be addressed in the stewardship challenge is the issue of illegal off-highway vehicle (OHV) use on the GWJNF. For this project, appropriate measures will be taken to restrict access after timber harvest activities are finished. These could include traffic restrictions that would continue to allow administrative use such as gates, or more permanent measures such as ditches and berms or boulders. Longer-term solutions would include working with partners and collaborators to increase education efforts and outreach about the impacts to the resource associated with illegal motorized use.

Resource Protection

Resource Protection - #1: The Forest Service should adopt additional design criteria and mitigations for erosion and sedimentation risks and to protect the candy darter to support a finding of no significant impact (FONSI).

#10-59 proposed mitigation to address likely BMP failures must be included in the EA.

#10-61 If the District cannot ensure adequate implementation of riparian buffers or accurate stream classification, it cannot rely on these types of protections to justify a finding of no significant impact.

#10-63 The Draft EA does not adequately analyze erosion and sedimentation risks based on soils and slopes within the proposed harvest units. Nor does the Draft EA consider whether the soil and slope conditions in the project area require additional measures to mitigate these risks.

#10-107 we strongly urge the District to adopt design criteria for the units in the Dismal Creek watershed that are consistent with the USFWS Candy Darter Recovery Outline.

#10-124 we urge the District to adopt an enhanced riparian buffer to protect the candy darter, consistent with the recommendations of the USFWS Candy Darter Recovery Outline.

#10-127 the Draft EA states that harvest in units designated for shelterwood with reserves will leave a residual basal area of 15 to 25 square feet per acre. For any harvest that will occur in a channeled ephemeral zone, no more than 50% of the basal area may be removed, and a minimum basal area of 50 square feet per acre must remain after management. Although this requirement applies across the Forest, it is especially important in the Dismal Creek watershed given the presence of the candy darter.

Response: We agree that additional design criteria should be adopted for this project and that existing Forest Plan standards should be emphasized. One example is FW-14, a standard that addresses channeled ephemeral zones:

> *For any harvest that will occur in a channeled ephemeral zone, no more than 50% of the basal area may be removed, and a minimum basal area of 50 square feet per acre must remain after management*

The Conservation Plan also has action items that address all pertinent items from the USFWS Candy Darter Draft Recovery Outline (Fish and Wildlife Service, 2018). Specifically, from the Draft Recovery plan:

> *This should be accomplished by avoiding and minimizing threats to the species including: 1) sedimentation 2) increases in water temperatures; 3) spills and discharges; and 4) other non-native species (i.e., besides variegate darters). Measures to protect other physical and biological features should also be implemented.*

Three shelterwood units within the Dismal working area were dropped due to concerns over sedimentation. This lowered the total number of treatment acres and temporary roads, skid trails, and log landings and the potential sediment risk from these sources.

A new design criteria element was added to the project to block public motorized use on FR6871 (Brookmont Road) at the completion of the proposed treatments in Dismal Units 9 and 10. Blocking public use of the ford across Pond Lick / Rocky Branch is expected to improve downstream water quality and benefit proposed critical habitat for the candy darter.

<u>Resource Protection - #2</u>: The Forest Service should ensure that the project conforms with Virginia's Forestry BMPs (best management practices) and collect data to evaluate the actual in-field effectiveness.

#8-7 To minimize adverse impacts to the aquatic ecosystem as a result of the proposed activities, DCR recommends the implementation of and strict adherence to applicable state and local erosion and sediment control/storm water management laws and regulations.

#10-47 the District must ensure existing roads are in compliance with statutory and regulatory conditions, including applicable BMPs, and bring them into compliance if they are not already.

#10-57 the District concluded its minimal "water quality analysis" with a conclusory statement that "[i]t is anticipated that water quality may be affected by sediment loading over the short-term, but measurably long-term water quality effects should not occur if Forest Plan standards and Virginia's Forestry BMP are adhered to."[. .]There is no evidence to explain what led the District to reach this conclusion for the nine channel crossings it considered or for the numerous other sedimentation risks posed by the project. [. .]the District must conduct an actual, detailed sedimentation analysis for the entire project.

#10-58 the District assumes that Virginia BMPs will be properly implemented and effective, but the District does not disclose, discuss, or evaluate the actual in-field effectiveness of BMPs, generally or specifically in Virginia. This failure results in an analysis that inappropriately relies upon unrealistic BMP effectiveness, neglecting to account for the probability and effects of BMP failures.[. .]Experts considering other timber management projects on the Jefferson National Forest have explained that BMPs are in fact rarely effective in preventing pollution of streams, rivers, and other water bodies associated with logging and road building.

#10-60 The District has neither provided evidence to support the efficacy of BMPs, nor disclosed the shortcomings in its analysis that assumes their effectiveness.[. .]the District must disclose whether its BMPs have succeeded or failed in the past and how this history bears on the current project.

#10-62 The numerous failures along the Mountain Valley Pipeline route in Virginia also illustrate how unrealistic the District's reliance on BMPs is[. .]Given these common failures of erosion control devices and BMPs in similar terrain, the District must discuss how it will address these issues and adequately protect water quality during implementation of the Phase II project.

#10-130 the District cannot simply rely on BMPs to claim there will be no significant impacts from erosion and sedimentation in the project area.

#11-7 The ineffectiveness and lack of enforcement of BMPs/Plan Standards and other mitigation measures was documented by the USDA Office of Inspector General, who found that logging on National Forests often failed to follow mitigation measures, failed to conduct required water quality monitoring, and failed to prepare adequate riparian area analyses. U.S. Dept. of Agriculture, Office of Inspector General, "Forest Service Timber Sale Environmental Analysis Requirements," No. 08801-10-At (January 1999).

Response: The GWJNF is currently monitoring previously sold timber sales to collect data on the effectiveness of design criteria and project level mitigations. The sales proposed in this project will be included in this data collection and will be managed under an adaptive management strategy that will apply additional restrictions and mitigations if it is determined they are needed to be compliance with Virginia BMPs or Forest Plan Standards.

An analysis of Forest benthic and water quality data by Smith and Voshell (2013) compared pre-activity macroinvertebrate metrics with post-activity metrics for streams located below timber harvests and prescribed burns at various locations across the Forest and concluded that "management practices are successful at reducing effects on aquatic organisms" from these activities. The results showed no decline in macroinvertebrates following timber sales or prescribed burns, while a comparison of pre and post stream liming macroinvertebrate metrics showed a significant increase in macroinvertebrate health following that management activity. Water quality and macroinvertebrate samples continue to be collected on the GWJNF to assess and monitor stream conditions.

Based on public comments and additional quantitative sediment analysis, a modified proposed action was selected. This proposal dropped Dismal Units 16, 17, and 18 as a means to effectively reduce water quality impacts, rather than solely relying on BMPs. In another location, FR6871 (Brookmont Road), road related sedimentation was potentially problematic in the Tract Fork watershed. At the completion of the proposed treatments in Dismal Units 9 and 10, this road will be blocked to public vehicular traffic, which will substantially reduce erosion and sediment transport to the nearby stream, and ultimately improve water quality.

Roads

Roads - #1: The Forest Service should complete a roads analysis for the project to address impacts associated with use for logging access and hauling.

#10-35 On what basis did the District conclude that the Roads/Transportation system was " not present," was "not directly or indirectly impacted by the alternatives" or was "out of the scope appropriate for [the] project"?[. .]the District must analyze road conditions to ensure compliance with the Clean Water Act.

#10-37 the District proposes to use FR 201 to access logging units in the Dismal area.[. .]The District must consider the impacts of using this road on rare communities and on water quality in the trout streams. [. .]have the resource needs and issues noted in the TAP been addressed?

#10-39 the District proposes to use FR 6031 to access Bromley Hollow units[. .]Has the necessary maintenance work been done to reopen this road?

#10-40 For FR 112 in the Dismal area, the TAP notes that an EA was done to relocate this road. Has the road in fact been relocated?

#10-41 the TAP recommends several roads in the project area for downgrading or decommissioning in the TAP[. .]Without additional analysis, the District should not invest any resources in improving or maintaining roads that the TAP has recommended downgrading or decommissioning.

#10-46 The District Draft EA fails to discuss whether any of the 13 miles of temporary roads included as part of the proposed project will include stream crossing and, if so, how they will satisfy the requirements of Section 404 in order to be exempt from the permit requirement.[. .]The District also must ensure that construction of temporary roads in the project area similarly conforms to the requirements of the Clean Water Act and Corps regulations

#10-48 it appears the District is proposing to use the Little Horse Equestrian Trail as a road in the Dismal area.[. .]this trail is a narrow, single track equestrian trail that would need significant work in order to expand it to allow for logging equipment and vehicles[. .]If it intends to use this trail as a road in the project area, it would have to construct the road in a way that does not impact the streams along the trail.

#11-8 The analysis likewise cursorily dismisses the impacts of roadbuilding, even temporary logging roads, as an integral part of this project.

Response: Forest Service Road FS 6031 (Bromley Hollow) received significant maintenance in the last five years using on-District resources. The road currently meets the maintenance objective level. This road has no major issues and will receive the appropriate level of maintenance during the duration of the proposed timber harvest.

There is only one temporary road that is proposed to cross a perennial stream. A full span temporary bridge will be required to mitigate impacts to the stream. This proposed crossing is in the Peak Creek working area. Temporary roads will be used on a short term basis to accomplish specific goals (timber harvesting).Temporary roads will be retired upon completion of need including some, or all, of following activities: the following: installing water diversions: revegetating exposed soils; barricading/blocking entrance with an earthen berm, rocks, etc.; re-contouring slopes. Gating of temporary roads will be considered during project implementation if other access control measures are not available. Permanent gating of temporary roads is not predicted to prove more effective than using the closure measures listed above.

Most of the mileage that is proposed for use as a temporary road and that is considered Little Horse Equestrian Trail is simultaneously designated as two Forest System Roads, FR1063 (Little Horse) and FR201C (Little Horse Spur). There is approximately 1.2 miles of the Little Horse Equestrian Trail that does not have duel designation and that is proposed as a temporary road. These two sections have good alignment and have been used as fire control lines over the past ten years on three prescribed burns. These sections are driven by vehicles and dozers and would only need minor improvements to accommodate hauling for timber harvests.

The horse trails impacted will be closed during active harvesting operations to minimize user conflict. Trailheads will be signed for closure notices and EDRD will do outreach to horse user groups to inform.

Roads - #2: The Forest Service should assess the current maintenance status of the roads within the project area and address their contributions to water quality.

#10-43 In failing to analyze roads at the project planning level, the District has failed to ensure the system roads in the project area are being maintained in accordance with the requirements of the Clean Water Act and state water quality standards.

#10-44 there is good reason to question whether various roads in the Eastern Divide project area are being maintained in compliance with these BMPs. A 2007 survey of twelve stream crossings in the Eastern Divide project area, including a number of streams in the Dismal Creek area, revealed particularly concerning results[. .]Have these crossings been fixed and brought into compliance with the requirements of the Clean Water Act?

Response: System roads are considered to be meeting Forest Plan standards and objectives. System roads require continual maintenance and will be assessed prior to any timber sale implementation. Road maintenance needs will be documented before implementation takes place. Road maintenance requirements for pre-haul, hauling, and post-haul road use will be specified in the timber contract and will address the tons/loads of gravel needed, ditches to be pulled and other drainage features to be maintained, minor blading, etc. Therefore, systems roads are expected to be meeting best management practices to minimize erosion and protect water quality throughout this project.

Cumulative impacts to water quality and aquatic habitat from system roads will be evaluated in the final EA. Design criteria or mitigation measures may be assigned to certain road segments or portions of the project based on the environmental analysis recommendations. Specifically, a modified proposed action was developed based on the cumulative effects analysis for water quality. This proposal dropped Dismal Units 16, 17, and 18 as a means to effectively reduce water quality impacts, rather than solely relying on BMPs. In another location, FR6871 (Brookmont Road), road related sedimentation was potentially problematic in the Tract Fork watershed. At the completion of the proposed treatments in Dismal Units 9 and 10, this road will be blocked to public vehicular traffic, which will substantially reduce erosion and sediment transport to the nearby stream, and ultimately improve water quality

Soils

Soils - #1: The Forest Service should provide for public review a complete analysis for effects to soils, including cumulative effects, to support a finding of no significant impact (FONSI).

#10-64 the Draft EA fails to (1) disclose and analyze which soil types in the proposed harvest units have a high erosion hazard or are failure prone, and then (2) combine that data with a slopes analysis to determine where advanced harvest systems are required.

#10-66 The District must issue a revised Draft EA that considers the presence of highly erosive soils in the areas proposed for timber harvest, the realistic efficacy of BMPs, and the likely sedimentation risk from timber harvest, skid roads, and temp roads, and other soil disturbing activities in each project area.

#10-67 the separate analysis for the Dismal Area was a sedimentation analysis only; it does not discuss the impacts to soils in the Dismal area.[. .]The District must conduct a soils analysis for the Dismal Creek area.

#10-68 The soils analysis the District conducted for the rest of the project area is inadequate.[. .]the analysis fails to discuss the existing soil conditions, including the particular soil types and risks associated with each.

#10-69 The District also fails to explain the adverse impacts caused by soil disturbance and compaction.

#10-71 It is not clear (1) which units were actually analyzed, (2) the types of soil present in the project area and unique risks involved, (3) the actual impacts that result from soil disturbance and compaction, other than erosion, or (4) the activities that cause the most disturbance and means by which the District can mitigate or avoid such disturbance

#10-131 In addition to considering the soil types and slopes in the project area, the District should also commit to clarify the meaning of "sustained slopes."

Response: Across the entire project landscape, design criteria are in place to minimize impacts to soils and water resources. A Forest Service soil scientist completed a soil analysis of all harvest units, as well as a steep slope geographic information system (GIS) analysis to map slopes greater than 35 percent, in order to assess potential impacts. Field verification will be necessary to identify slopes greater than 35 percent sustained for 200 feet, where winching operations will be necessary to minimize impacts to soils. No other advanced logging systems are planned.

Sustained slopes greater than 35 percent will mostly be avoided, although some logging may occur around the perimeter with use of hand felling and cabling trees from steeper areas to areas with less than a 35 percent slope. Very little construction of skid trails is expected on land with slopes over 35 percent. Of land that is suitable for harvesting in Management Prescription Areas 8A1 and 9A1, it is difficult to calculate the percentage which is inoperable due to slope and other geological conditions. This requires examining sites in the field to verify operability.

While this has been done on many of the units proposed and as a result portions have been dropped, it is difficult to predict the total amount of operable ground with any accuracy. Mapping which shows slopes over 35 percent, is not enough to make decisions regarding operability.

Dismal Creek was the only watershed that warranted a quantitative sediment analysis based on potential impacts to federally listed candy darter (*Etheostoma osburni*) and proposed critical habitat in proximity to the project. Implementation monitoring efforts will be on-going through Timber Sale Administration and district staff field work. Water quality and benthic macroinvertebrate monitoring will also take place in discreet locations for monitoring purposes. And lastly, resources have been committed for this project to include post-harvest soil disturbance monitoring, to assess soil impacts and best management practice (BMP) efficacy.

Vegetation

Vegetation - #1: The Forest Service should provide support for its claim that it can manage for gypsy moth and oak regeneration using the same silvicultural methods.

#9-5 Assertions that insect and disease infestations are an imminent threat or that the Forest Service's logging will improve forest health are not demonstrated by the agency.

#10-10 The best science rejects the District's claim that it can somehow manage for gypsy moth and oak regeneration using the same silvicultural methods.[. .]Reducing susceptibility thus tends to focus on reducing the prevalence of preferred host trees within a stand. The most common silvicultural method for doing so is selectively thinning oak, particularly low vigor oak, and other preferred host species, not oak regeneration.

#10-12 the District must either (1) explain why the proposed logging to address the gypsy moth objective is not inconsistent with the best available science, or (2) revise the name and objectives of this project to more accurately reflect nature of this vegetation project.

#12-3 assertions that insect and disease are an imminent threat or that the Forest Service's logging activities will improve forest health are not demonstrated by your agency.

Response: The GWJNF, the Forest Service Southern Region Forest Health Protection Unit, and the Virginia Department of Agriculture and Consumer Services (VDACS) coordinated during the planning phase of this project. Derek Puckett, Biological Scientist with the Forest Health Protection Unit, was on the ground with district personnel to conduct field reviews of areas in and around many of the stands. Mr. Puckett is the liaison between Forest Service and VDACS, focusing on gypsy moth trap counts and monitoring.

Mr. Puckett has provided guidance to Forest Service personnel in regards to how to use the VDACS STS (Slow the Spread) Decision Support tool. VDACS maintains the gypsy moth traps and monitors the population data. Once collected, the information is then entered into a

database to be viewed by partner agencies as well as the public to help inform land management decisions. Gypsy moth trap catch counts for both 2018 and 2019 reveal numbers that are concerning in and around the Phase II proposed project area. The high trap count numbers recorded in these years indicate that populations could quickly rise to levels that could cause significant defoliation in oak dominated stands.

Phase II project includes objectives associated with Forest Plan Management Prescriptions (Rx) 8A1 and 9A1 and also includes responding to forest health concerns resulting from recent gypsy moth defoliation and current gypsy moth presence. We don't make the claim that we will "manage gypsy moth". We are proposing to manage stands that are in proximity to recent defoliation events and documented high trap catch counts of gypsy moths. A thinning harvest stresses the stand. If coupled with another stressor, such as a defoliation event, mortality would be expected for the stand overstory trees. Cutting live oaks prior to a gypsy moth defoliation preserves potential stump sprouting ability. The clearcut with reserves harvest method was selected to maximize coppice regeneration of oak trees that could be damaged by gypsy moth defoliation before they may decline and/or die. Clearcut with reserves harvesting method will allow current alive oaks to survive, sprout, and develop into a future stand component where without treatment, they may have fallen victim to a gypsy moth defoliation event.

The presence of gypsy moth within the forest matrix is one of a number of stress factors present that contribute to a need to consider regeneration. Cutting living oaks now before they succumb to a forest pest is important because they are still able to stump sprout. Without oak stump sprouting, most of the forested area identified in the Phase II project area could become dominated by non-ecologically desirable species such as red maple (*Acer rubrum*) or yellow poplar (*Liriodendron tulipifera*). Taking no action in the project area could result in a long-tern shift in stand composition and a greater level of departure from the desired conditions for these stands.

<u>Vegetation - #2</u>: The Forest Service should provide greater evidence and support for the claim that the proposed treatments will result in oak regeneration on sites with little to no advanced regeneration.

#3-2 I would ask if there is currently sufficient oak of varying canopy position to provide adequate stocking following first harvest entry from stump sprouting?

#3-3 What are the limiting factors in lack of adequate oak regen / advanced regen?

#5-6 The EA ignores science showing that many of these logging units will likely convert to poplar forest instead of the oak forest they are seeking.

#10-6 The Draft EA provides several objectives for this project: (1) addressing forest health concerns resulting from past gypsy moth defoliation and current gypsy moth presence in the project area; regenerating oak to maintain a significant oak presence in the project area; and (3) increasing early succession habitat (ESH) in the project area. The Draft EA, however, does not contain analysis or evidence supporting that the proposed regeneration harvest will achieve these objectives in the proposed harvest units.

#10-11 recent studies suggest silvicultural treatments likely had no positive effect on oak vigor.[. .]Why has the District not addressed these studies or provided their own studies to support the conclusions in the Draft EA?

#10-13 The best science does not support the District's claim that the regeneration harvests will result in oak regeneration.[. .]the Draft EA does not demonstrate that regeneration logging in these units will actually regenerate oak.[. .]the Draft EA acknowledges the difficulty of regenerating oak in these oak- dominated stands[. .]Despite these difficulties, the Draft EA expresses confidence that these oak-dominated stands will regenerate as oak forest[. .]the most critical flaw is the Draft EA's failure to grapple with the impact of having "little to no" advanced oak regeneration in the project area. Studies underscore the importance of advance oak seedlings and regeneration in successfully regenerating oak.[. .]How does the District rationalize its conclusion that these stands will regenerate in oak? What evidence or studies did the District rely on to conclude that stump sprouts, without advanced oak regeneration, would be sufficient?

#10-14 the District must grapple with whether oak regeneration is a viable objective of this project as it is proposed.

#10-15 The District must analyze how its proposed residual basal areas[. .]will impact oak competition from shade intolerant species and subsequent oak regeneration in the project area.

#10-19 Has the District considered the current deer densities in the project area and how this will affect the success of oak regeneration? Without this analysis, it would be difficult for the District to accurately predict whether oak regeneration will be successful in the project area.

#10-20 the best scientific information shows that oak regeneration is difficult to achieve. An important factor in ensuring oak regeneration is the presence of advanced oak regeneration in the units to be treated.

#10-21 the District has proposed only regeneration harvest in an area with little advanced oak regeneration and proposes no subsequent management, other than some herbicide use, to encourage oak regeneration in the project area. The District must consider the relevant science on oak regeneration and demonstrate its proposal is likely to achieve the oak regeneration objective.

#11-9 This project, the Forest Plan notwithstanding, completely ignores the natural evolution and composition of forests over time.

#11-11 The project also proposes that attempting to force a forest into an oak-dominant regime will be successful, when there is much data to suggest that these forests may instead likely revert to yellow poplar forest

Response: Stand exam data collected shows there is currently an adequate amount of oak (species and size) present to provide future stand stocking from stump sprouting. Full stand stocking will not only occur from oak sprouting, but from other native species also. Most of the “reserve trees” selected to leave in the clearcut with reserve harvest prescription will be healthy oak trees. The

desire is to maintain some oak component in the future stand; not to have an oak-dominated stand

Ecologically successful limiting factors are a complex suite of human and social influences and their effects on past management of the forest. Lack of fire on the landscape over the last 50 to 75 years was driven by social influences that failed to fully understand the unintended negative effects on oak regeneration. Many shade-tolerant species (red maple (*Acer rubrum*), black gum (*Nyssa sylvatica*), striped maple (*Acer pensylvanicum*), white pine (*Pinus strobus*) and others) were able to proliferate in the understory and mid-story as fire was excluded, at the expense of oak saplings developing into advanced oak regeneration. Many of these historically oak dominated stands were maintained by repeated fire events which favored oaks over many of the thin-barked species. Oaks have an early life strategy of dedicating more of their resources to the "root development" (deeper tap root) over their "shoot development" (above grown growth). Historically, repeated stand exposure to fire was common as post-harvest fuel was heavy and fire suppression practices were not sophisticated.

Data collected during stand exams shows that there is currently sufficient oak present (species and size) on the landscape to provide future oak stocking from stump sprouting. Yellow poplar (*Liriodendron tulipifera*) is present in a few of the stands proposed for treatment, however, it is not yet a dominate stand component. Where yellow poplar will be competitive with oak stump sprouts, we have proposed a post-harvest herbicide treatment to favor oak competitiveness.

Stand exam data was loaded into a modeling program that predicts sprouting and growth, Forest Vegetation Simulator (FVS). Several runs confirm that there is sufficient oak stump sprouting to maintain oak in the next stand. Runs also model several post-harvest treatments that control competitor species and subsequently promote the competitiveness of the oak sprouts into the next stand overstory as the young stand reaches canopy closure over the next 20 years. Subsequent timber stand improvement treatments called "crop tree release" will be implemented to maintain as many oaks as possible in the overstory. An objective for these stands is to maintain some oak in the future overstory; not to necessarily create or maintain an oak-dominated stand.

Proposed regeneration treatment- coppice with reserves- is not intended to promote "oak vigor". It is intended to maintain a future oak regeneration potential. Post-harvest silvicultural treatments such as crop tree release have been shown to promote oak vigor in young stands and could be considered in a future decision document.

There is no claim that the proposed harvest treatments will regenerate an "oak forest". These stands are classified as upland hardwood stands that are currently dominated mostly by oak species. Our modeling predicts that the proposed treatments will maintain an oak component in the future overstory of these upland hardwood stands. In fact, a future stand with the same oak-dominated overstory is not preferable considering the current and future presence of gypsy moth, the growing threat of climate change which points toward hotter and drier future conditions in these stands and the widespread existence of oak decline in the Southern Appalachians, which is exacerbated by hotter and drier conditions.

Shade intolerant species such as black locust (*Robinia pseudoacacia*), yellow poplar, sassafras (*Sassafras albidum*) and yellow pine (*Pinus spp*.) are expected to regenerate along with oaks to varying degrees based on site and presence in the stand. The regeneration of these and other competitor species will be treated with two post-harvest treatments; 1) mechanical site preparation- cutting all sub-merchantable stems (1 to 6 inches diameter at breast height (DBH)) and 2) herbicide application treatment of undesirable competitor species one to two years after the mechanical site preparation.

Deer densities in the area are similar to other densely forested areas the national forest in western Virginia. Many of the proposed stands are located far from farmlands where densities are typically higher. However, deer browse is expected to occur within and adjacent to the project area. Deer browse can be heavy in some areas. When it is heavy it usually occurs in the first year after harvest. Because oaks develop extensive root systems and stump sprouts are utilizing the root systems of a mature trees, they have the ability to resprout time after time after their tops are browsed or killed. Oak seedlings and saplings are tenacious in their ability to resprout repeatedly after other species have died. Deer browsing tends to fall off significantly after the first year because the young stand becomes very brushy and more difficult to access as compared to a first year harvest.

David Loftis, a leader in oak silviculture in the southern Appalachian mountains over the last 30 years wrote in 2004:

> *Upland oaks have two fundamental requirements for successful regeneration and subsequent management, both in oak-dominated systems and in systems where oaks are important components of mixed hard wood forests. These two are the requirements:*
>
> 1. *The presence of competitive sources of oak regeneration.*
> 2. *Timely, sufficient release of these oak regeneration sources.*
>
> *The first requirement- competitive oak regeneration sources- is a restatement of the first law of oak silviculture; i.e., successful reproduction that exists in the current stand and stump sprouts from trees that are harvested from the current stand*. (p163 in Spetich, 2004)

Therefore, there are three proposed post-harvest silvicultural treatments to achieve oak regeneration and it future competitiveness:

1. Mechanical site preparation- to occur in first year following harvest.

2. Herbicide treatment of undesirable competitor species- to occur two to three years after harvest. Undesirable species that compete with oak regeneration could include all of the following: red maple, yellow poplar, black gum, sourwood, striped maple, white pine, birch and mountain laurel. The herbicide treatment would be applied to each individual plant and not applied in a broadcast treatment.

3. Crop tree release treatment- to occur fifteen to twenty-five years after harvest; the actual timing of the treatment will be determined by the district silviculturist and

typically occurs at the time of canopy closure in the young stand (the effects of this treatment will be addressed in a future decision document) .

Silvicultural prescriptions in this project does not state that we will maintain or create "an oak-dominated regime". We propose these treatments to maintain a future oak component in the overstory of stands that are regenerated. Without stump sprouting from oaks contributing to the future forest, most of the area will be dominated by non-oaks such as red maple or yellow poplar. Taking no action in the project area could result in a long-tern shift in vegetation and a greater level of departure from the desired conditions for these stands.

Vegetation - #3: The Forest Service should consider rare communities and State identified conservation areas in its effects analysis.

#8-1 the Walker Mountain Glades Conservation Site is located within the project site.[. .]Walker Mountain Glades Conservation Site has been given a biodiversity significance ranking of B3, which represents a site of high significance. The natural heritage resource of concern at this site is: Significant Natural Community G3?/S3/NL/NL (Central Appalachian Xeric Chestnut Oak-Virginia Pine Woodland)

#8-5 Dismal Area[. .]the Dismal Creek Stream Conservation Unit is located adjacent to the project site (Unit 18)[. .]The Dismal Creek SCU has been given a biodiversity ranking of B4, which represents a site of moderate significance. The natural heritage resource associated with this site is: Etheostoma osburni Candy darter G3/S1/LE/NL[. .]this species is currently classified as endangered by the United States Fish and Wildlife Service (USFWS).

#8-6 the Dismal Creek Conservation Site is located within the project site (Units 9, 10, 11, 16, and 18). Dismal Creek Conservation Site has been given a biodiversity significance ranking of B2, which represents a site of very high significance.

#10-108 Dismal Creek is also recognized as a Virginia Mountain Treasure.

#10-111 Has the District analyzed whether the project will have any effect on the rare wetland communities in the Dismal working area?

Response: The Walker Mountain Glades Conservation site will not be impacted by activities on the Bromley Hollow Road. The natural community of concern occurs higher up on the mountain. Also, the Dismal Creek Special Biological Area, as identified by the Forest Plan's Rx 9F designation, will not be disturbed with proposed timber harvests. The wet areas and rare plants will be protected and the effects to the federally endangered candy darter were considered in the project Biological Evaluation / Biological Assessment (BE/BA).

Vegetation - #4: The Forest Service should document that it has conducted silvicultural examinations for all proposed treatment areas.

#10-2 the District was required to complete stand exams before writing silvicultural prescriptions to log those stands.

#10-7 the District cannot develop silvicultural prescriptions to "fix" specific problems until it has examined the areas to be treated, diagnosed the issue, and selected silvicultural prescriptions that science shows will address the problem.[. .]an understanding of on- the-ground conditions through a stand examination is the necessary building block for any proposed logging.

#10-8 Has the District conducted common stand exams (or other similar silvicultural examinations) for all stands proposed for treatment in the project area?

#10-9 Without adequate site-specific information to inform its proposal for 1,200 acres of regeneration harvest and adequate evidence that this will address diagnosed needs in the proposed units, the District does not satisfy its NEPA and NFMA obligations.

#11-1 I have, however, noticed a good number of gypsy moth traps over the last couple of years and do find it curious that data from this trapping program.is nowhere included in the EA to justify the purpose and need.

Response: The EDRD has completed Common Stand Exams (CSE) for all the stands where proposed harvest treatments are planned; the exams confirm that the stands are appropriate for treatment.

At the time that the draft EA had been sent out for comments, several on-site field reviews had been completed by a certified silviculturist. Subsequent, more formal, field exams have since been completed and confirm the professional impressions and conclusions of the district forester. This data is included in the project record and was provided to this commenter

Gypsy moth trap counts confirmed that populations were high near all proposed treatment areas and even inside of some of the proposed units. Extrapolating from previous years counts, demonstrates that numbers are likely to build over the ensuing years. As gypsy moth populations build beyond a certain threshold, treating stands will be too late if we do not act proactively and treat these stands now to maintain oak in the future overstory.

There was significant coordination between the GWJNF, the Forest Service Southern Region Forest Health Protection Unit, and the Virginia Department of Agriculture and Consumer Services (VDACS) during the planning phase of this project. Forest Health Protection Unit conducted field reviews of areas in and around many of the stands.

Forest Health Protection provided guidance to the district regarding how to use the VDACS STS (Slow the Spread) decision support tool. VDACS maintains the gypsy moth traps and monitors the counts. This information is then entered into the database that can be viewed by agencies as well as the public to make informed decisions about management. The mating disruption program is a tool to manage “low-density” populations at or out in front of the STS leading edge. The most current leading edge is already considered to be past the areas proposed for treatment in this project.

Once the leading edge has passed, suppression is how “high-density” populations are managed. There is limited funding available to treat stands with “high-density” populations through suppression treatments. Treatment areas are prioritized by need The top three prioritized areas

are; 1) recreation areas, including visitor centers, campgrounds, and day use areas 2) high-value timber stands and timber sale areas currently under contract, and 3) identified old growth forest communities. None of the stands proposed for treatment in this project are in the prioritized treatment areas

Vegetation - #5: The Forest Service should make a commitment that no old growth will be logged, regardless of when it is identified, to support a finding of no significant impact (FONSI).

#5-7 Significant impacts to old-growth forests and the species that depend on them.

#10-78 Old growth is identified on the ground and as a result, the District must conduct on the ground surveys in all units prior to logging.

#10-79 We also strongly urge the District to commit in the EA that no old growth will be logged, regardless of when it is identified.

#10-80 Given the rarity and importance of old growth forest in the Southern Appalachians and the little existing old growth forest that has been identified in the field on the GW, it would be difficult to harvest any existing old growth without having significant impacts. These circumstances would likely require an EIS.

#11-10 If mature forests and old growth are in increasingly short supply in the private lands surrounding the Forest (as massive clearcuts on the north side of Big Walker Mountain may suggest), then it is incumbent on the Forest Service to take that fact into account when it suggests that the overwhelming need if for this Ranger District to create more early-successional habitat.

Response: The EDRD is in the process of identifying old-growth within and adjacent to all units. A number of old growth communities within the project areas have been identified and mapped, and will be excluded from the potential sale units. We are committed to continuing this effort up through the marking and sale layout stage of the project. Any old growth communities identified will be protected. We welcome any additional information concerning existing old growth within the project area.

Vegetation - #6: The Forest Service should provide for public review a complete analysis of non-native invasive species within the project area, to support a finding of no significant impact (FONSI).

#1-1 This project should also take into consideration the emerald green ash borer.

#10-23 Are these areas sufficiently clear of NNIS that they can withstand ground disturbance that will likely serve as a vector for NNIS expansion within the area? Do the proposed units require pre-treatment?

#10-89 The District must include a more meaningful analysis of NNIS in the project area. This analysis should include discussion of project impacts on the spread of NNIS, current conditions within

the project area, design criteria to minimize or reduce these impacts, as well as subsequent monitoring for new NNIS infestations and of NNIS treatment conducted in the project area.

#10-90 As part its analysis, the District should also disclose and evaluate the success of previous pre- and post-logging NNIS treatment on the Jefferson National Forest, the likelihood that NNIS treatments will be effective here, the back-up plans if initial efforts are not effective, and a realistic assessment of the risk the project will increase NNIS here.

Response: Emerald ash borer (*Agrilus planipennis*) is already active on the EDRD. Fortunately ash trees are a minor component in our stands. Where we do find ash in stands it will be proposed for cut to encourage sprouting.

Common Stand Exams were completed for the proposed stands. There were no non-native invasive species (NNIS) present in any of the stands proposed for treatments due to the closed canopy of stands proposed for harvest. However, there are populations of autumn olive (*Elaeagus umbellata*) and multiflora rose (*Rosa multiflora*) that are within two to three miles of stands on FR201 (Dismal Road) and FR10281 (Yancey Road). We are aware that a harvest opens the stand up and could create an environment for NNIS intrusion. If NNIS is found post-harvest we could treat it using the Forest-Wide Non-Native Invasive Plant Control EA (Forest Service, 2010). We also have proposed herbicide treatment of undesirables after harvest. Since NNIS are undesirable; we could effectively treat those found at that time. The autumn olive located on the road edges of FR201 was treated last year. It is proposed for treatment again in 2020 and 2021 to minimize the seed source and its potential spread.

The National Forest lands, like neighboring private lands, are increasing susceptible to NNIS. The Forest Service is committed to controlling NNIS, including reconnaissance, integrated treatments (chemical, mechanical, cultural and combinations) and monitoring to judge the effectiveness of treatments. While complete eradication of NNIS populations is not feasible in many cases, the agency is committed to not allowing these plants to curtail productivity or threaten important habitats on public lands or displace native species in large numbers.

Active management, including the systematic reconnaissance of treatment units and surrounding areas, will allow for identification and control measures on populations that would have likely gone undetected. Harvesting activities will likely allow the agency leverage funding opportunities for widespread control measures through vehicles such as the Knutsen-Vandenburg Act (K-V) funds and use of stewardship contracting. Robust monitoring will occur and will be scheduled in the Forest Service's Forest Activity Tracking System (FACTS) database to insure follow-up.

Successful treatments pre-harvest have been documented in the Tub Run (2017) Bastian (2019) timber sales. Nearby roadside populations of tree-of-heaven and autumn olive, respectively, were treated and removed prior to any harvesting. Successful post-harvest treatments have been documented on the Laurel Creek and Olean timber sales. Small populations of tree-of-heaven (*Ailanthus altissima*) and paulownia (*Paulownia tomentosa*) were effectively treated in the first two years after harvest.

<u>Vegetation - #7</u>: The Forest Service should provide a cumulative effects analysis that considers the impacts from the proposed action in conjunction with Eastern Divide Insect and Disease Project Phase I and the Eastern Divide Highlands Prescribed Burn project.

#4-1 The effect of all projects in the Dismal Creek area need to be reviewed before proceeding.

#5-2 Significant cumulative impacts when considered with Phase 1.

#6-1 This 1200-acre project is on top of another 1200-acre cut, yet no consideration has been made of the combined effect of these cuts, plus a large prescribed burn in the area.

#9-2 Given the high levels of logging proposed in this project and the Insect and Disease I project, prescribed burning activities in Eastern Divide Highlands Prescribed Burn project and other projects (including the categorically excluded Insect and Disease I project) more thorough analysis than presented here is warranted.

#10-70 The District's analysis also does not consider the impacts from various activities in the project area.[. .]which activities would result in most of the negative impacts. This is important because it allows the District to discuss meaningful mitigation measures and alternatives.

#10-128 Did the District consider all of the Phase I activities or just the units that are sold/completed?[. .]has the District considered the prescribed burn at all? The Draft EA indicates it has not.

#10-133 The District must more clearly define the Eastern Divide Phase II project area.[. .]what are the boundaries of the project area used for analysis?[. .]Is it one large area or multiple small areas surrounding each working area?[. .]The District should provide a simple map delineating the boundaries of this project area, including national forest and private lands.[. .]The District should also provide additional maps with more helpful information.

#11-4 The cumulative impacts must be fully analyzed and addressed, particularly since 'forest health' exemptions were used by the FS to avoid doing a rigorous environmental analysis for those projects

<u>Response:</u> There are no other proposed projects in the Dismal Creek watershed. There were no harvest units that were planned in Phase I in this watershed.

Harvest units from Phase I coupled with proposed harvest units in Phase II complement each other in reaching the desired minimum percent of early successional habitat while not exceeding the maximum percent- (10 percent) in the Management Prescription (Rx) 8A1 area in the Dismal area. As noted in the draft EA, the total percent early successional habitat (ESH) created by Phase I and Phase II is just under six percent.

Much of the harvest acres are spread out over several watersheds that are geographically and spatially diverse. Previous prescribed burning over the past ten years overlaps with four units totaling approximately 150 acres of proposed treatment areas in the Flat Top area. These units are not in the Dismal Creek watershed.

We considered all of the proposed harvest units in Phase I (sold, unsold or completed) and used the contiguous Rx area when analyzing vegetation management objectives.

Water Quality

Water Quality - #1: The Forest Service should provide for public review a complete analysis of the effects on water quality from the proposed herbicide treatments to support a finding of no significant impact (FONSI).

#10-81 The scant analysis of herbicide use in the Soil and Water Quality Analysis, however, is entirely inadequate to conclude that such widespread usage would have no significant impact.

#10-82 the Draft EA should include a discussion of issues related to the safety, effects on non-target species, and cumulative impacts of the proposed ~800 acres of herbicide use in the project area. And what is the extent of existing and proposed herbicide usage in the project area?

#10-83 The District must also consider impacts to groundwater in karst terrain from herbicide use in the project area.

#10-84 The District's single sentence noting that triclopyr is not soil active does not excuse the District from conducting the required impacts analysis.

#10-85 The movement of triclopyr in soils depends on the soil type and properties, further underscoring why the District must consider soil type in the project area.

#10-86 Given the fact that triclopyr has the potential to reach shallow groundwater in soils, the District must address this characteristic and consider the potential for contamination in karst terrain.

#10-87 to the extent the District does not yet know how many acres will actually receive herbicide treatments, it must analyze for the full 883 acres.

#10-88 the separate analysis for the Dismal Area was a sedimentation analysis only; it does not discuss the impact of herbicide in the Dismal Area, despite the fact that herbicide use is proposed in all but two units in the Dismal Area.

Response: All herbicide application protocols will be followed to protect surface water quality. There are no karst features in the project area and therefore no expected potential herbicide impacts to groundwater. Additionally, Forest Plan standards require a buffer of 30 linear feet from streams when applying herbicides and no herbicide application is allowed in standing water that could potentially carry into streams.

Glyphosate and triclopyr are not considered soil active substances, meaning the herbicides do not adhere to soil particles once applied and therefore, it is not expected that water quality could be impacted if erosional processes do create paths to water bodies. The use and effects of such chemicals on USFS land has been previously analyzed and documented in the Forest-

Wide Non-Native Invasive Plant Control EA (Forest Service, 2010) and tiered to for this project analysis. Lastly, herbicide use will be targeted, rather than broadcast sprayed; thus, negligible impacts to water quality from herbicide are expected.

<u>Water Quality - #2</u>: The Forest Service should provide for public review a complete analysis for effects to water quality, including cumulative effects, to support a finding of no significant impact (FONSI).

#5-3 Significant water quality issues (including drinking water) where intense logging will occur in or near streams.

#10-55 the District must issue a revised Draft EA that includes (1) a water quality analysis for the entire project area, rather than only the Dismal Creek area; (2) acknowledgement of limited effectiveness of BMP; (3) consideration of erosion and sedimentation risks based on soil type and slopes; (3) and consideration of cumulative impacts to water quality and soils.

#10-56 The most immediate problem with the District's water quality analysis is that it only considered the Dismal Creek area and nine channel crossings from temporary roads, bladed skid trails, and unbladed skid trails in the other working areas.

#10-72 In addition to this project, the District has proposed Phase I of the Eastern Divide project, as well over 60,000 acres of prescribed fire. Many of the working areas overlap, including the waterbodies that will be impacted in the project area.[. .]in order to adequately consider the cumulative impacts on water quality in the project area, the District must consider the impacts from Phase I and the prescribed fire

#10-101 The Dismal Creek Sediment Analysis concedes that the project will result in 4.99 tons of sediment per year entering Dismal Creek if all the proposed management activities occur in one year—a 2.26% increase over the background sediment level. The District must explain how this projected sedimentation will "maintain or restore [the] balance of water and sediment" and "stabilize or improve" the condition of Dismal Creek.

#10-103 the EA acknowledges that the project will result in increased sunlight reaching the forest floor. Has the District analyzed the impact on water temperature in the project area from warmwater runoff?

#10-129 Has the District considered the cumulative impacts on water quality in No Business and Kimberling Creeks of multiple high-intensity timber harvests in this area?[. .]the District claims in its Aquatic Organisms Report that "[a]ctivity on private land within these watersheds are expected to remain the same as current for the next 10 years." How can the District support a claim that activity on private land will remain the same for the next decade, while also claiming it is too difficult to gauge future activity on private land?

#11-6 The EA inadequately addresses the impacts of sedimentation on a relatively pristine brook trout stream such as Dismal Creek.

Response: Wild trout (including wild brook trout (*Salvelinus fontinalis*)) were addressed in the EA as a Management Indicator Species (MIS) for cold water habitats in the Forest Plan. Specifically, Dismal Creek, Pearis Thompson, Standrock Branch, and other tributaries within the Dismal Sale Area were identified as Class III wild brook trout streams. Standrock Branch supports regionally significant southern strain brook trout. NoBusiness Creek and Ding Branch are likewise Class III wild brook trout streams within the Dismal Sale Area. The upper reaches of Peak Creek within and downstream from the Peak Creek Sale Area are cool water stream reaches supporting wild rainbow trout.

The use of design elements, best management practices (BMPs), and avoidance of impacts in riparian areas would result in negligible impact to aquatic biota or aquatic and riparian MIS, specifically wild trout. Some minor sedimentation can be expected from harvest activities. The modified proposed action eliminated three units from the Dismal area in the Standrock Branch watershed. The elimination of these units decreases the amount of ground disturbance that would have occurred with the construction and use of roads, skid trails, and landings, thus decreasing the amount of potential erosion and sedimentation to stream habitat. As discussed in the Hydrology section of the final EA, no alternative should produce sediment that will be outside the natural range of variability or have a significant impact on the beneficial uses of area streams.

The final EA will be updated to include a comprehensive water quality assessment for the entire project area, including potential impacts to municipal water sources. Forest Plan standards and design criteria will be in place to protect soils and water resources, which meet or exceed the Virginia Best Management Practices for forestry activities. Any potential mitigation measures will be determined through the cumulative effects analysis. To assess the effectiveness of these standards, aquatic macroinvertebrate monitoring (pre and post project) is being used as an indicator of current conditions and effects to water quality, temperature and the aquatic biological community.

Water Quality - #3: If the District concluded there were no karst features in the project area, it must explain how it reached this conclusion.

#10-53 If the District concluded there were no karst features in the project area, it must explain how it reached this conclusion.

Response: The project area was initially assessed for the presence of karst through a geographic information system (GIS) analysis using data and geologic mapping by the Virginia Division of Geology and Mineral Resources, which is considered the best available science. It was determined that there was no overlap of project activities and the 'karst bedrock of Virginia' GIS layer. Further, district field staff are trained to identify karst resources while doing field surveys across the project area. No significant karst features were observed during field work and therefore no potential impacts to karst are expected from this project. Forest Plan standards will be enacted if karst features are inadvertently discovered during implementation.

Wildlife

Wildlife - #1: The Forest Service should provide for public review the Biological Evaluation / Biological Assessment (BE/BA) analysis to support its conclusions summarized in the draft Environmental Assessment.

#10-73 The Draft EA contains very little information about the possible impacts of the proposed action on threatened, endangered, and sensitive (TES) species. Although the Draft EA states that the District has prepared a BE/BA, we have not been able to review it.[. .]the Draft EA's conclusory analysis of impacts on TES species is startling. [. .]Several TES species were found within the project area. Yet, the District provided little analysis of potential impacts to these species, instead referencing the incomplete and unavailable BE/BA for its analysis.

#10-76 the Incidental Take Statement (ITS) for the Indiana bat assumes taking of bats through habitat manipulation on up to 16,800 acres per year. The ITS estimated that all habitat manipulation activities excluding prescribed fire would impact approximately 1,800 acres per year. Between Phase I and II along, the District proposes over 2,400 acres of timber harvest, which will occur in the same general timeframe.[. .]Exceeding limits in the ITS would constitute an unlawful take under the Endangered Species Act and increasing this limit would require re-initiation of consultation with the U.S. Fish and Wildlife Service and modification of the Biological Opinion and ITS.

#10-77 it is difficult for the public to meaningfully comment on the District's TES analysis when it provides minimal information and otherwise references a BA/BE that is incomplete and not publicly available.

#12-2 The project could potentially impact aquatic species such as the Federally endangered candy darter, could potentially impact four species of rare or listed bats, and other rare or listed species. The project is problematic because the Forest Service relies on watered-down analysis that is totally inadequate.

Response: The Biological Assessment/Biological Evaluation (BA/BE) for the project were completed as part of the Draft Environmental Analysis and are part of the project file. These documents are not available for release until consultation with U.S. Fish and Wildlife Service (USFWS) is completed. These documents are available for review in the Official Project Record located at the EDRD office or electronically on the project website.

<u>Wildlife - #2</u>: The Forest Service should address the potential impacts to the candy darter and its proposed critical habitat and consider additional design criteria to protect this endangered species to support a finding of no significant impact (FONSI).

#5-4 Significant impacts to endangered and threatened species, including aquatic species like the candy darter fish in the Dismal Creek area and its proposed critical habitat.

#10-45 the project area includes critical habitat for the endangered candy darter. The District must ensure that roads and stream crossings in this part of the project would not adversely affect critical habitat.

#10-97 Dismal Creek contains the endangered candy darter and proposed critical habitat for the candy darter.[. .]The candy darter and its proposed critical habitat require robust analysis and special consideration.[. .]The Draft EA does not adequately address the potential impacts to the candy darter and its proposed critical habitat[. .]the Draft EA does not adequately explain its conclusion regarding the potential impacts from the project on the candy darter's proposed critical habitat.[. .]If the project will affect the candy darter (even if not adversely), it will also affect the habitat in which the candy darter lives (even if not adversely).

#10-98 It is not sufficient for the agency to rely on the Conservation Plan because the Conservation Plan was published in 2004—14 years before the candy darter was listed as endangered—and necessarily does not account for the candy darter specifically[. .]the Conservation Plan does not consider whether specific conservation measures are necessary for threatened and endangered fish species in the New River drainage[. .]The requisite conservation measures may be similar or identical for fish species in the New River drainage, but the District cannot reach that conclusion without analysis

#10-99 increased water temperature is a threat to the candy darter[. .]The Draft EA cannot simply tier to the Conservation Plan without additional analysis about the potential impacts of water temperature increases from the project.

#10-100 The Conservation Plan requires the District to establish and manage a Conservation Zone in the Kimberling Creek-Dismal Creek watershed that includes the riparian corridor and channeled ephemeral zone at a minimum. Has the District identified the Conservation Zone within the watershed?

#10-102 because the Conservation Plan applies to the entire 6th level watershed, the District must explain how the Conservation Plan's objectives will be satisfied with respect to sedimentation in tributaries like Standrock Branch and Pearis Thompson Branch.

#10-105 The proposed action is not compatible with the needs of the candy darter or its proposed critical habitat. Sedimentation from timber harvest and associated ground disturbance in the Dismal Creek watershed is a significant threat to the candy darter[. .]Critically, the District cannot simply rely on BMPs to protect the candy darter. [. .]When USFWS listed the candy darter as endangered, it found that BMPs did not ameliorate the risk of extinction[. .]The USFWS Candy Darter Recovery Outline specifically recognizes that ordinary BMPs are not sufficient

#10-106 The District must consider whether the Dismal Creek watershed can accommodate hundreds of acres of regeneration harvest given the foreseeable impacts on the candy darter and its proposed critical habitat.[. .]We are particularly concerned about units 6, 16, 17, and especially 18 given their close proximity to Standrock Branch. The confluence of Standrock Branch and Dismal Creek marks the upstream boundary of the proposed candy darter critical habitat

Response: As per the GWJNF Federally Listed Threatened and Endangered Mussel and Fish Conservation Plan (Conservation Plan) (Forest Service, 2004), a Conservation Zone will be established and managed within the Dismal Creek Watershed. The Conservation Zone will include the Riparian Corridor and the Channeled Ephemeral Zone. The Conservation Zone will serve as a 1) filter strip to impede surface runoff, trap sediment, and filter and adsorb pollutants, 2) vehicle exclusion zone to prevent major ground disturbance adjacent to stream channels, and 3) shade strip to help maintain ambient stream water temperatures, moist habitats, and sources for large woody debris. Minimum widths are shown in Table 3 from the Conservation Plan, as seen below.

Table 3. Minimum Conservation Zone Widths for Federally Listed Mussel and Fish Species (In Feet, Measured as Described Above) On Each Side Of Stream

	Slope Class		
	0-10% Core Area	11-45% Core Area Plus Extended Area†	45%+ Core Area Plus Extended Area†
Perennial	100	125	150
Intermittent	50	75	100
Channeled ephemeral	25	25	25

The Habitat stressors listed in the Final Rule are water temperature, excessive sedimentation, habitat fragmentation, water chemistry, and water flow. There are no additional habitat stressors specific to the candy darter that were not addressed in the 2004 Conservation Plan. The only stressor specific to the candy darter is the hybridization and genetic swamping by the variegate darter. Nothing that is proposed by this project is increasing the chance of variegate darter introduction to the watershed.

The table below associates the candy darter stressor and threat with the corresponding Conservation Plan and Forest Plan standards that were developed to maintain the physical, chemical and biological components of aquatic ecological integrity.

Potential stressor of candy darter from Final Rule 11/21/2018	Threats to candy darter from Draft Recovery Outline	Conservation Plan Standards and Jefferson Plan Standards
Water Temperature	Increases in Water Temperatures	11-010, 11-011, 11-012, 11-016, 11-017, 11-019, 11-022, 11-034, 11-035, 11-036, 11-038, 11-039, 11-041, 11-042, 11-045, FW-14, FW-18, FW-27
Excessive Sedimentation	Sedimentation	11-001, 11-002, 11-003, 11-009, 11-011, 11-012, 11-021, 11-022, 11-023, 11-027, 11-028, 11-029, 11-030, 11-031, 11-032, 11-033, 11-034, 11-035, 11-036, 11-038, 11-039, 11-040, 11-041, 11-042, 11-043, 11-044, 11-045, 11-046, 11-047, 11-048, 11-049, 11-050, 11-051, 11-052, 11-053 11-054, 11-056, FW-12, FW-13, FW-16, FW-20, FW-21, FW-22, FW-23, FW-24, FW-25, FW-26, FW-27, FW-29, FW-30, FW-31
Habitat Fragmentation		11-049, 11-049, 11-050, 11-051, 11-052, 11-053 11-054, 11-055, FW-19
Water Chemistry	Spills and Discharges	11-007, 11-026, 11-033, 11-034, 11-035, 11-036, 11-040, 11-045, FW-28
Water Flow		11-008, 11-013, 11-049, 11-049, 11-050, 11-051, 11-052, 11-053 11-054, 11-055, FW-12, WF-19
Non-native Species Competition (specifically, hybridization with variegate darter*PRIMARY STRESSOR)	Variegate darter, and Other Non-native Species	11-006, 11-014, 11-054, 11-055
	Other Physical and Biological Perturbations	11-004, 11-005, 11-010, 11-011, 11-012, 11-013, 11-015, 11-016, 11-017, 11-018, 11-019, 11-020, 11-024, 11-025, 11-038, 11-039, 11-043, 11-044, FW-14, FW-15, FW-17, FW-18, FW-23, FW-27

Additional discussion with the U.S. Fish and Wildlife Service (USFWS) (personal communication 3/18/2020) confirmed that as stated in the Final Rule effective December 21, 2018, as published in the Federal Register vol. 83, No. 225, on 11/21/2018, the primary stressor for the candy darter is hybridization with the variegate darter. All other threats and habitat stressors associated with Forest Service habitat management are similar to those already addressed in the Conservation Plan for other species in other watersheds, and no additional measures are needed.

Following additional hydrological analysis, Dismal Units 16, 17, and 18 within the Standrock Branch watershed were dropped. This reduced the modeled sedimentation to both Standrock Branch and Dismal Creek, and thus decreased potential impacts to candy darters and their habitat.

Wildlife - #3: The Forest Service should provide for public review the complete analysis for effects to locally rare or Regionally Sensitive species and their habitat to support the finding of no significant impact (FONSI).

#10-52 the Draft EA makes no mention of locally rare species in the project area or potential impacts to such species.[. .]74 such species occur in Bland, Pulaski, and Wythe Counties. To the extent the District determined that none of these locally rare species occurred in the project area, the Draft EA must, at a minimum, state this finding and explain how the District reached this determination.

#10-74 the District should include an effects determination for sensitive species as it has for federally threatened and endangered species rather than simply indicating "N/A."

#10-75 green salamanders are known or likely to occur in Bland and Wythe Counties. Green salamanders are Region 8 sensitive species. Do they exist in the project area? Did the District survey for green salamanders?

#10-113 Virginia DCR identified the presence of two plant species in the Dismal Creek watershed that are rare both globally and in Virginia: Bog bluegrass and Torrey's mountain-mint. Did the District assess whether the project would impact these species?

Response: Green salamander (*Aneides aeneus*) habitat does not occur in the harvest units, thus they were not surveyed for presence. They prefer moist cliff or big rock areas; such areas surely exist in Bland and Wythe Counties, but not within the activity areas. The Dismal Creek rare plant locations are away from proposed activities and will not be impacted by this proposal. Most of the locally rare species exist in calcareous areas, wet sites, and caves. The EDRD biologist has looked for cerulean warblers (*Setophaga cerulean*) on Flat Top Mountain in the past, but has never heard any there. Otherwise, no locally rare species were observed.

Wildlife - #4: The Forest Service should address the issue of forest fragmentation in its effects analysis.

#8-12 if permanent tree removal is necessary, the proposed project will fragment Ecological Cores (C1, C2, C3, C4, and C5) as identified in the Virginia Natural Landscape Assessment[. .]DCR recommends efforts to minimize edge in remaining fragments, retain natural corridors that allow movement between fragments and designing the intervening landscape to minimize its hostility to native wildlife (natural cover versus lawns).

Response: Forest fragmentation in a classical ecological sense is the breaking up of a continuous forest cover by non-forest land uses. Rights-of-ways, major roads, changes in land cover and development are all things that can fragment a landscape. No new system road is proposed or any conversion of forested to non-forested habitat in this project. Thus true fragmentation in a classical sense is not occurring. There will be temporary edge effects though, until harvest units get approximately ten years of age.

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